

MINUTES OF THE  
MARICOPA ASSOCIATION OF GOVERNMENTS  
BUILDING CODES COMMITTEE

May 21, 2014

Maricopa Association of Governments Office  
302 N. 1<sup>st</sup> Ave  
Ironwood Room  
Phoenix, AZ

COMMITTEE MEMBERS

Mary Dickson, El Mirage, Chair  
\*Larry Taylor, Gilbert, Vice Chair  
Brett Harris, Avondale  
Phil Marcotte, Buckeye  
\*Mike Tibbett, Carefree  
Mike Baxley, Cave Creek  
A-Martin Perez, Chandler  
\*Jason Field, Fountain Hills  
Tom Paradise, Glendale  
\*Ed Kulik, Goodyear  
\*Chuck Ransom, Litchfield Park  
Tom Ewers, Maricopa County  
Donna Canale for Steven Hether, Mesa

Bob Lee, Paradise Valley  
\*Dennis Chase, Peoria  
\*VACANT, Phoenix  
\*Michael Williams, Queen Creek  
Michael Clack, Scottsdale  
\*Brigham Bennett, Surprise  
\*Roger Vermillion, Tempe  
A-Dale Crandell, Tolleson  
A-Kevin Bruce, Wickenburg  
Gregory Arrington, Youngtown  
Jackson Moll, Home Builders Association  
Joel Dickinson for Sharon Bonesteel, Salt  
River Project

OTHERS IN ATTENDANCE

Scott Wilken, MAG  
Merry Holmgren, MAG  
Anne Reichman, ASU  
Jonathan Lopez, APS

Mike Ornoski, Phoenix  
Ralph Garcia, Phoenix  
Rocco DeLuca, IAEI Central Arizona  
Seth Starks, Phoenix  
A-Ron Boose, Chandler

\*Those members neither present nor  
represented by proxy.

A-Those members participating via  
audioconference

1. Call to Order

Mary Dickson, Chair, called to order the May 21, 2014 meeting of the MAG Building Codes Committee (BCC) at 2:00 p.m.

2. Introductions

Voting members Martin Perez, Dale Crandell, and Kevin Bruce attended via telephone conference call. All members and guests introduced themselves.

3. March 19, 2014 Meeting Minutes

Bob Lee made a motion to approve the March 19, 2014 minutes. Tom Ewers seconded the motion, and the motion passed unanimously.

4. Call to the Audience

There were no comments from the audience.

5. Comments From the Committee

Bob Lee said that May is Building Safety Month. He said that the Arizona Building Officials (AZBO) and Salt River Project (SRP) have prepared some public service announcements that have been on television and radio recently.

Mary Dickson discussed the recently concluded AZBO Educational Institute in Tucson. She said the next conference will be October 20-24 in Prescott, and asked for any recommendations for classes for that event.

Tom Ewers asked if any jurisdictions allow any kind of over-the-counter commercial permits. Several committee members indicated that their jurisdictions do.

Tom Paradise said that Steve Dudley is the new Building Official at the City of Glendale. Mary Dickson said that Ron Boose is the new Building Official at the City of Chandler.

6. Solar Ready II Update

Scott Wilken led a discussion on the Solar Ready II project. He said that the project's goal is to reduce the non-hardware cost of residential solar. He said the first Stakeholder Group meeting was held in February, and was attended by members of this committee and other interested parties. He said that meeting focused on Best Management Practices (BMPs) that have been gathered by the project partners from around the country. Following the meeting, he said that staff sent out a survey to the meeting participants to gauge interest in which BMPs should be addressed first. He said that the project will pursue the top three vote-getters initially, and later in the project a few other BMPs will be addressed. He said the top three were Solar Readiness Ordinance for new construction; Streamlined Solar Permitting Process; and Standardized Solar Permitting Fees. He said that because the top three BMPs have to do with building codes and permits, he thought this committee would be the appropriate body to discuss implementation of

the BMPs, perhaps through the Building Code Amendments and Standards Manual. He suggested starting the discussion with the Solar Readiness Ordinance.

Bob Lee asked for an explanation what a Solar Readiness Ordinance is. Scott Wilken said that it would be an ordinance that requires all new construction to be built in such a way that solar equipment can be added later without major reconstruction. He said that the City of Tucson now requires all new construction to include these building code adjustments, for example. Bob Lee asked if the industry has standardized enough so that provisions included on the roof would be able to accommodate any solar equipment. He asked if there is enough variety among mounting systems that a home could be ready for one type of mounting system, and the homeowner buys a different kind of mounting system. Tom Ewers said that basically one kind of bolted to the roof, and another is held on by weights, but weights can't be used on a sloped roof. He said that the County allows standard plans to be filed with and without solar, and there isn't much difference except that the part of the roof where the solar will go doesn't include tile. He said that with this the house has to be built specifically for that solar installation. Bob Lee said that it sounds like the BMP is recommending a conduit from the roof to the vicinity of the service entry section (SES) and other generic provisions.

Bob Lee asked if anyone had encountered issues with mounting solar on a roof. He said that every application in Paradise Valley has been approved and they all work. Tom Paradise said that in Glendale they haven't had any problems until they inspect. He said that it's difficult to inspect the mounting depending on what type of mount it is. He said some solar companies will give different options, such as blocking between the trusses, which means going into the attic, and then the solar panels can be mounted to that blocking. He said that others say that you can put a lag bolt through the roof into the truss, but that has to be engineered. Bob Lee said that it doesn't have to be engineered. He said that he'd been part of a discussion addressing this question in the past, and had come to the conclusion that lag bolts up to 3/8" could be used without the need for engineering. Tom Paradise said that the issue is that the bolt has to be through the thickness of the truss, and that may not be easily inspected, or visible at all. He said there are other mounting methods using a U-bolt that goes around the truss. He asked Tom Ewers if the mounting method is included with the standard plans that have a solar package. Tom Ewers said that it is included, and the method used is on blocks between the trusses. Tom Paradise said that it comes down to the inspector needing to inspect the mounting in the attic.

Scott Wilken said that the intention of the Solar Ready Ordinances is to avoid the mounting problems later on. He discussed the requirements of the Tucson Solar Ready Ordinance. He said the ordinance appears to not require a specific method of mounting, as long as the plans show where the equipment will go.

Jackson Moll said that the Homebuilders Association (HBA) would oppose any mandatory requirements of this type. He said that most or all of their builders offer solar as an option, and he thinks that they would accommodate a home buyer's request to build a house as solar ready. He said that the HBA would be happy to contribute to proposed solar ready guidelines. He said that he thought the 2015 code included an appendix that has guidelines for solar installations. Michael Clack said that he is leery of making something like this a requirement, and expects that the marketplace would take care of something like this. He said it makes sense to have guidelines or checklists for those builders or home buyers who want to do it.

Scott Wilken said that he has seen figures indicating that building a house solar ready adds a relatively small amount to the cost of building a home, and it is much less than retrofitting the

house at a later date. Jackson Moll said that given the current market, the HBA is sensitive to any additional marginal cost, because it adds cost to the price of the home and could potentially limit home buyers from qualifying for the home loan.

Tom Ewers said that the only big issue he's seen with retrofitting houses is that often the electrical service isn't adequate to handle the solar system, requiring an upgrade of the electrical service. He said it doesn't make sense to make every home have that upgraded electrical service in case the homeowner wants to add solar at some point. Michael Clack compared solar ready ordinances to mandating that every house include an outlet for an electric car. He said he has difficulty mandating that everyone make provisions for something they may or may not ever purchase. Gregory Arrington asked about challenges Tucson has faced with their ordinance. Ron Boose said that he was the Building Official in Tucson prior to moving to Chandler. He said the ordinance was adopted prior to his tenure, but during his time he said they heard very little resistance. He said Tucson also has a grey water piping ordinance, which got a lot of resistance and complaints. But he said he doesn't remember hearing contractor complaints about the solar ready ordinance, and that it doesn't add much cost.

Tom Ewers said that the handout mentions siting of lots for better solar access, and that is very difficult to enforce. Scott Wilken said that for this topic he was planning to focus on the building code aspects, and, given MAG's lack of role in land use planning it may be best to leave that part out of the discussion. Tom Ewers said that Maricopa County has a checklist of things to show on a plan that helps standardize their process. Scott Wilken said that this topic sounds like something that the committee might move forward with, creating a document that could be adopted as an optional or mandatory checklist, as each community sees fit. Bob Lee said that it would be easier if such a document was for a smaller, cheaper alteration than an alteration that comes with a large cost. Scott Wilken said that something could be written to allow some pieces to be required and some suggested.

Scott Wilken said that the next BMP to discuss was Streamlining Solar Permitting. He pointed to examples in the handout, including a standard checklist, a provision for a faster permit or no required permit as long as certain requirements are met. Tom Ewers said that Maricopa County allows over the counter or online application for rooftop or ground-mounted solar. He said they have set fees that were based on a nexus of salary hours and cost of service. He said they do 20-30 solar permits per day, most of them issued the same day the application is submitted.

Bob Lee said that he has an issue with processing applications out of the order in which they were submitted, and treating certain types of applications preferentially. Scott Wilken said that was a valid concern, and that it comes down to a policy decision by each individual jurisdiction if they want to encourage solar, or really any type of construction, by fast-tracking those permits. Tom Ewers said that the online and over the counter permits are for all things residential, not just solar. He said those permits are processed in order of submittal, but are still typically done on the same day. Gregory Arrington said that Youngtown has a list of over the counter permits, including solar, but it's based on the current production of each day. He said that these permits can take longer if there is a backlog of other permits to process, but they're normally processed with 48 hours.

Donna Canale said that Mesa doesn't require permits for solar at all. She said that it's considered equipment, and occasionally a solar installation will get reviewed because it's in view of an arterial street, but otherwise solar installations go through no city review. Scott Wilken said that he has talked to Steve Hether about the Mesa solar policy, as well as Larry

Taylor about Gilbert's similar policy. He asked if Mesa has seen any problems with this yet. Donna Canale said that they haven't had any major problems or issues they are aware of. Bob Lee said his issue would be with utilities or with firefighters responding, if the installation was not done with a disconnect. He said that he would think the jurisdiction would have responsibility if a firefighter was hurt or killed because of this. Donna Canale said that Mesa is not concerned with that issue. Michael Clack said that Scottsdale strives to do over the counter permits, but it's a function of how busy the department is at the time, but the permits are done within 2 to 3 days. He said the issue in Scottsdale is with commercial installations, with the fire department concerned with solar installations at commercial developments. He also said that equipment like solar panels have to be screened in commercial developments. Because of this, he said that commercial permits take longer. Bob Lee said that Paradise Valley has the same screening requirement, and decided that solar arrays are not equipment that has to be screened from view. He also said that solar is not allowed on pitched roofs of hillside homes.

Brett Harris said that Avondale designates one day a week for a vast array of over the counter permits, done on a first come, first serve basis. He said it has worked very well. He said that the solar installers are limited to two on those days, and many will bring in two for over the counter and submit additional permits for regular processing, which are done within 48-72 hours.

Bob Lee said that another issue he saw with the handout material is that it discusses using a single electrical diagram. He said that state law requires a one line and three line, and discussed the possibility of getting that requirement changed at the legislature. He also said that in chapter 16 of the International Building Code there is a section on a variety of load combinations, but there's nothing in there about if a solar system is installed that is preventing someone from walking on that section of the roof. He said there should be something that can be done as a code change that would allow a load combination that specifically addresses solar, to allow the elimination of a certain amount of live load in that area. He said that would eliminate the need for engineering on a solar system. Scott Wilken said that that would be something the committee could review as a recommended local amendment. Bob Lee said that many of the examples in the handout reference needing engineering for roof-mounted solar systems, but typically in this region we don't need engineering to be done. He said if it was in the code as a recognized load combination it would be easy. Mike Baxley said that he thinks the references to engineering in the examples are for the rack, rather than attaching to the trusses.

Mike Ornoski discussed life-safety problems with the actual installation and inspection of solar arrays in the field. He said that many of the installers don't fully know what they're dealing with because the industry is so new, and that none of the solar inspections he has worked on at Phoenix have passed on the first inspection. He said that while the permitting process should be streamlined, the life-safety issues cannot be ignored or forgotten. Tom Ewers said that they do reviews of the single line and three line, and all the connections and disconnect, and the inspectors require the installers to meet the manufacturer's specifications. He said there are problems in the field, and they are always cognizant of that. Michael Clack said that even though the discussion has been about streamlining, the discussion shouldn't be construed as ignoring life-safety issues. Tom Ewers asked if the discussion can be distilled into bullet points of things that can be agreed upon point by point, as general guidelines rather than example codes or ordinances. Scott Wilken said he can bring the distilled discussion points back at a future meeting. He said that to Mike Ornoski's point, there will have to be further examination of the installers themselves, and he'll bring more information about that to a future meeting.

Scott Wilken said that the third BMP to discuss was Standardizing Permit Fees. Tom Ewers pointed out that there is a state law that requires the fees to be no greater than the cost of service. He said that different jurisdictions are naturally going to have different costs of service, and that there won't be standard fees across the board. However, he said that individual jurisdictions have standardized their fees based on their costs of service. He said that they have flat fees for their solar permits. Mike Baxley said that Cave Creek charges by the module, and it's not unusual to have over 100 modules on a roof. Bob Lee said that Paradise Valley uses UBC Table 1A, which sets the cost of the permit based on the valuation of the system, excluding the value of the array. He said that ends up being around a \$300 permit, which is comparable to other jurisdictions. Jackson Moll said that the HBA has been supportive of the cost recovery model of permit fees, but has issues with the waiving or reduction of some fees for some applications, which can lead to increased fees on homebuilders to make up the loss. He recommended being mindful of cutting fees on some permits as an incentive for certain kinds of construction, unless the jurisdiction is willing to make the financial commitment to cover that loss.

Scott Wilken discussed collecting information related to these discussions through a solar survey that has been sent out. He said that as the discussion progressed it sounded like there wasn't as much to address with these particular BMPs as originally thought.

Phil Marcotte asked committee members if they have an idea what the wait time on particular streamlined or over the counter permits might be. Brett Harris said that on their over the counter day it's first come, first served, so the person who is fourth in line might have to wait a while. He said that even on those days everyone is welcome to submit their plans for the normal review. Tom Ewers said they tell people it will be an hour or two and they're welcome to leave and come back. He said they also have a lot of people who say, at the end of the day, that they'd prefer submitting through the regular process, which takes a week or less. Bob Lee said that he doesn't think it's fair that if he's at the counter reviewing solar permits, there's no one in the back reviewing single-family house plans. Mary Dickson said that's the challenge of small jurisdictions. Tom Ewers said that he's gotten to the point that 40% of his staff is at the front counter doing over the counter reviews every day, but that leaves 60% of the staff for regular reviews.

Scott Wilken said the next step will be another stakeholder group meeting to discuss these questions more, followed by another discussion at this committee.

## 7. Legislative Wrap-Up

Scott Wilken gave an update on the bills of interest from the legislature. He said that among the five bills discussed at the previous meeting, only Senate Bill (SB) 1183, regarding fire sprinklers and fire access roads, passed the legislature. Tom Ewers said that the unintended consequence will be that no one is allowed to have a fire access road longer than the code requires. Bob Lee said that current practice allows for some options, but this new law will take those options away, and everyone will have the widest and shortest roads as required by the code. Jackson Moll recommended that the members discuss with their legal counsel the extent to which the final sentence of the bill restricts their ability to deny a permit because the access road requirements can't be met.

Jackson Moll discussed another from the recent session. He said that SB 1307 deals with fall protection on residential construction sites, adding certain exemptions for inspection. He also discussed the upcoming International Energy Conservation Code (IECC). He said that the IECC

is one of the most important issues for the HBA board. He said that after the 2015 IECC is available, he would like to outline the concerns the board has with the code and discuss it at a meeting of this committee.

8. MAG Building Inspectors/Plans Examiners Forum Discussion

Scott Wilken said that because the Chair of the Building Inspectors/Plans Examiners Forum wasn't able to attend this meeting, this item will be tabled.

9. Updated MAG Building Codes Committee Membership

There were no updates.

10. Updated Survey of Code Adoption

Jackson Moll said that Surprise has adopted the 2012 codes.

11. Topics for Future Agendas

There were no topics.

12. Adjournment

Michael Clack made a motion to adjourn. Tom Ewers seconded the motion and the motion passed unanimously. The meeting was adjourned at 3:27 pm.